POLYCOAT PRODUCTS
A Division of American Polymers Corp.

TECHNICAL DATA SHEET

POLYCOAT TUFFSHIELD® 801

High Performance Spray Elastomer Coating

PRODUCT DESCRIPTION

Polycoat Tuffshield 801 is an unique high tensile and tear resistance, rapid curing, 100% solids, flexible, two component spray elastomer that can be applied to suitably prepared concrete and metal surfaces. Its extremely fast gel time makes it suitable for applications down to -20°F (-28.89°C). It may be applied in single or multiple applications without appreciable sagging and is relatively insensitive to moisture and temperature allowing application in most temperatures.

FEATURES

- Excellent Tensile and Tear Resistance
- Excellent Thermal Stability
- Good Chemical Resistance
- Low Temperature Flexibility
- Meets USDA Criteria
- Superior Abrasion and Impact Resistance
- Superior Hydrocarbon Resistance
- Zero VOC (100% Solids)

TYPICAL USES

- Cargo Containers
- Cold Storage Facilities
- Fertilizer Plants
- Food Processing Plants
- Industrial and Manufacturing Facilities
- Landfill Containment
- Parking Garage Decks
- Power Plants
- Refineries
- Secondary Containment
- Structural Steel
- Walkways and Balconies

PACKAGING

10-gallon kit: 5 gallon (18.9 liters) pail of Side-A, 5 gallon pail (18.9 liters) of Side-B

100-gallon kit: 50 gallon (189 liters) drum of Side-A, 5 gallon pail (189 liters) of Side-B

COLORS

Clear/Neutral. Custom colors are available upon request. Color Packs, when used, must be added to Side-B.

Due to its aromatic composition, Polycoat Tuffshield 801 will tend to yellow or darken in color and will become flat after expo sure to UV light.

COVERAGE

Polycoat Tuffshield 801 may be applied at any rate to achieve desired thickness. Theoretical coverage for 1 mil (0.254 microns) thickness is one gallon per 1600 sqft (3.78 liters per 149 sqm).

SURFACE PREPARATION

In general, coating performance and adhesion are directly proportional to surface preparation. Most failures in the performance of surface coatings can be attributed to poor surface preparation. Polyurea coatings rely on the structural strength of the substrate to which they are applied. All

TECHNICAL DATA (BASED ON DRAW DOWN FILM)

Mix Ratio by Volume	1A : 1B
Pot Life @ 160°F (66°C), 50% R.H.	2-4 Seconds
Tack Free Time (thickness & substrate temperature dependent)	20-40 seconds
Recoat Time	0-6 hours
Viscosity cps at 150-160°F (66.5-71°C) **Side-A** **Side-B**	 200 ± 20 300 ± 20
Density (Side A & B Combined)	9.51 lbs/gal (1140 kg/m³)
Flash Point	> 200°F (93.3°C)
Hardness, ASTM D-2240	50 ± 5 D
Tensile Strength, ASTM D-412*	3800 ± 300 psi (26.1 ± 2 MPa)
Elongation, ASTM D-412*	375% ± 50%
Tear Resistance, ASTM D-412*	425 ± 50 pli (75 ± 8.7 kNm)
Service Temperature - Dry	-40°F to 250°F (-40°C to 121°C)
Service Temperature - Wet	40°F to 120°F (4.44°C to 48.89°C)
Water Vapor Permeability, ASTM E-96	0.461 perm-inch
Volatile Organic Compounds, (Side-A & B combined) ASTM D-2369-81	0 lbs/gal 0 gm/liter
Abrasion Resistance ASTM-D4060 1 kg wt 1000 cycles: **CS-17 Wheel Weight Loss**	 7.41 mg
Recommended Applied Thickness	> 2 mm (0.1 cm)
Return to Service: Foot Traffic	1-4 hours
Return to Service: Full Service	10-24 hours
Water Absorption, ASTM D471 (maximum 74°F or 23°C, 24 hours	< 0.5%
Crack Bridging, ASTM C836 (-13°F or -25°C, 1.6mm crack, 25 cycles)	Pass
Impact Resistance @ 77°F or 25°C (ASTM G14)	> 200 lbs (>90 kg)
Pull-Off Strength (minimum), ASTM D4541: **Inter-Coat Adhesion (within recoat time)**	Excellent
Concrete (Shot blasted profile), substrate failure occurred	>500 psi (3.4 MPa)
Concrete (Primed), substrate failure occurred	>500 psi (3.4 MPa)
Steel (90 um blast profile)	>900 psi (6.2 MPa)
Lineal Shrinkage	1 - 2%
Flexibility (1/8" [3mm] Mendrel Bend Test), ASTM D1737	Pass
Resistance to Weathering, ASTM G-23 (Type QUV Weatherometer-3000 hrs exposure)	No cracking or blistering. Color change, gloss reduction & chalking are noted.

(*These physical properties from sample sprayed with Graco Foam Cat 200 @ 2000 psi minimum, with Gusmer GX7-400 mechanical purge gun @ 150-160°F (65°C to 71°C) blistering. Color change, gloss reduction & chalking are noted.. Different machine and parameter will change these properties. User should perform their own independent testing as properties are approximate).

surfaces must be free of dust, dirt, oil, grease, rust, corrosion and other contaminants. When coating previously used substrates, it is important to consider the possibility of substrate absorption, which may affect the adhesion of the coating system, regardless of the surface preparation. Polycoat recognizes the potential for unique substrates from one project to another. The following information is for general reference. For project-specific questions, contact Polycoat.

CARBON STEEL:

A. Exterior coating: Abrasive Blast to SSSP, SP-10 (Near- white) with a surface profile of 1.2 - 2.2 mils.

B. Internal Lining: Abrasive Blast to SSSP-SP-5 (White metal)with a surface profile of 2.2 -3 .2 mils. Remove all dust, etc. on all surfaces intended for coating, prior to application.

NEW AND OLD CONCRETE:

Refer to SSPC-SP13/NACE 6, or ICRI 03732: CSP 3-5. New concrete must be cured for 28 days prior to product application. Surface must be clean, dry, sound and offer sufficient profile for product adhesion. Remove all dust, dirt, oil, form release agents, curing compounds, salts, efflorescence, laitance and other foreign matter by shotblasting and/or suitable chemical means, in accordance with local chemical regulations. Rinse thoroughly, to achieve a pH between 8.0 and 11.0. Allow to dry completely. If old concrete has a surface that has deteriorated to an unacceptably rough surface, Polycoat Products PC-260 or a mixture of Polyprime 21 and sand should be used as a repair agent for cracks, spalls, bug holes and voids. Upon full cure of the repair agent, prime the entire surface intended for coating. Concrete Surface Preparation Reference:

ASTM D4258 - Standard practice for cleaning concrete

ASTM D4259 - Standard practice for abrading concrete

ASTM D4260 - Standard practice for etching concrete

ASTM F1869 - Standard test method for measuring moisture vapor emission rate of concrete

ICRI 03732 - Concrete surface preparation

WOOD:

All wood should be clean, dry and free of any knots, splinters, oil, grease or other contaminants. Splintered or rough areas should be sanded. Knots should be repaired using Polycoat Products PC-260 with sand. Upon full cure of the repair agent, prime the entire surface intended for coating.

STEEL (ATMOSPHERIC AND IMMERSION EXPOSURE):

Remove all oil, grease, weld spatters and round off any sharp edges from surface. Minimum surface preparation is Near White Metal Blast Cleaning per SSPC-SP10/NACE 2. Optimum surface profile is 2-3 mils. Prime and shoot Tuffshield 801 on to any bare metal the same day as it is cleaned to minimize any potential flash rusting. Aluminum:

Aluminum should be blasted with aluminum oxide or sand, and not with steel or metal grit. Excessive blasting may result in a warped or deformed surface. After blasting, wash aluminum with a commercially available aluminum cleaner. Allow to dry, then prime.

BRASS AND COPPER:

Brass and copper should be blasted with sand, and not with steel or metal grit. Remove all dust and grease prior to applying primer. Galvanized Surfaces:

Clean and degrease any contaminated surfaces before priming. Do not blast galvanized surfaces with an abrasive grit. An adhesion test is recommended prior to starting the project.

FIBERGLASS REINFORCED PLASTIC:

The gel coat should be lightly blasted or sanded with 80 grit sandpaper and cleaned.

PLASTIC FOAMS:

Enhanced adhesion is obtained when the foam is mechanically abraded. When coating polystyrene, do not use a solvent-based primer.

TEXTILES, CANVAS, FABRICS:

Adhesion to most fabrics, geothermal membranes and textiles does not require a primer.

STAINLESS STEEL:

Stainless steel may be grit blasted and degreased before priming. Some stainless steel alloys are so inert that it is not possible to achieve a satisfactory bond. An adhesion test is recommended prior to starting the project.

NEW AND OLD CAST IRON:

Blast with a steel grit and degrease before priming. Old cast iron is difficult to prepare for a satisfactory bond. It can absorb oil and water soluble contaminants that will keep returning to the surface after the coating system has been applied and affect the coating system adhesion. An adhesion test is recommended prior to starting the project.

ALL OTHER SURFACES:

An adhesion test is recommended prior to starting the project.

MIXING

Polycoat Tuffshield 801 may not be diluted under any circumstances. Thoroughly mix Polycoat Tuffshield 801 Side-B (Resin side) with air driven power equipment until a homogeneous mixture and color is obtained.

APPLICATION

Both Side-A and Side-B materials should be preconditioned to 75-85°F (24-27°C) before application. Recommended surface temperature must be at least 5°F (3°C) above the dew point. Polycoat Tuffshield 801 should be applied using a plural component, heated, high pressure 1:1 spray mixing equipment like Graco's Reactor, Glass Craft or other equivalent machine may be used. Both Side-A and Side-B materials should be sprayed at a minimum of 2000 psi and at temperatures above 150°F (66°C). Adequate pressure and temperature should be maintained at all times. Polycoat Tuffshield 801 should be sprayed in smooth, multidirectional passes to improve uniform thickness and appearance.

STORAGE

Polyeuro® 8245 has a shelf life of one (1) year from date of manufacture in original, factory-sealed containers when stored indoors at a temperature between 60-95°F (15-35°C). Side-A and Side-B drums are recommended to be stored above 60°F (15°C). Avoid freezing temperatures. Store drums on wooden pallets to avoid direct contact with the ground. If stored for a long period of time, rotate Side-A and Side-B drums regularly.

Limitations

Do not open until ready to use. Both Side-A and Side-B containers must be fitted with a desiccant device during use.

WARNING

This product contains isocyanates and curative material.

TECHNICAL DATA SHEET

POLYCOAT TUFFSHIELD® 801

High Performance Spray Elastomer Coating

Please read all information in the General Guidelines, Technical Data Sheets, Guide Specifications and Safety Data Sheets (SDS) before applying material. These products are for professional use only and preferably applied by professionals who have prior experience with the Polycoat Products materials or have undergone training in application of Polycoat Products materials. Published technical data and instructions are subject to change without notice. Contact your local Polycoat Products representative or visit our website for current technical data, instructions, and project specific recommendations.

Limited Warranty: Polycoat Products warrants its products to be free of manufacturing defects and that they will meet Polycoat Products' current published physical properties. Seller's and manufacturer's sole responsibility shall be to replace that portion of the product which proves to be defective. There are no other warranties by Polycoat Products of any nature whatsoever expressed or implied, including any warranty of merchantability or fitness for a particular purpose in connection with this product. Polycoat Products shall not be liable for damages of any sort, including remote or consequential damages resulting from any claimed breach of any warranty whether expressed or implied. Polycoat Products shall not be responsible for use of this product in a manner to infringe on any patent held by others. In addition, no warranty or guarantee is being issued with respect to appearance, color, fading, chalking, staining, shrinkage, peeling, normal wear and tear or improper application by the applicator. Damage caused by abuse, neglect and lack of proper maintenance, acts of nature and/or physical movement of the substrate or structural defects are also excluded from the limited warranty. Polycoat Products reserves the right to conduct performance tests on any material claimed to be defective prior to any repairs by owner, general contractor, or applicator.

Disclaimer: All guidelines, recommendations, statements, and technical data contained herein are based on information and tests we believe to be reliable and correct, but accuracy and completeness of said tests are not guaranteed and are not to be construed as a warranty, either expressed or implied. It is the user's responsibility to satisfy himself, by his own information and test, to determine suitability of the product for his own intended use, application and job situation and user assumes all risk and liability resulting from his use of the product. We do not suggest or guarantee that any hazard listed herein are the only ones which may exist. Neither seller nor manufacturer shall be liable to the buyer or any third person for any injury, loss or damage directly or indirectly resulting from use of, or inability to use, the product. Recommendations or statements, whether in writing or oral, other than those contained herein shall not be binding upon the manufacturer, unless in writing and signed by a corporate officer of the manufacturer. Technical and application information is provided for the purpose of establishing a general profile of the material and proper application procedures. Test performance results were obtained in a controlled environment and Polycoat Products makes no claim that these tests or any other tests accurately represent all environments. Polycoat Products is not responsible for typographical errors.